

## CLAIMS

## I Claim

Claim 1. (Presently Amended) A method to generate in a first database system a compact item descriptor, a machine readable character string, and determine the interchangeability of two items from their compact item descriptors; the method comprising the steps:

providing a first item;

providing a second item;

providing a classification tree as a recursive structure in the first database comprising a root parent fork with child branches to child forks with child branches or child leaves each with a set of parameters which classifies a set of items including the first item and second item where two different items that classify to the same child leaf and same parameter values are interchangeable or those that do not classify to the same child leaf and same parameter values are not interchangeable;

adding at each fork of the classification tree, labeling a character or sub-string of characters as a label that distinguishes each child branch or child leaf of the fork; generating a commodity code, a character string that uniquely identifies the sequence of child branches and child leaf selected for the classification of an item represented by the child leaf, starting at the root of the classification tree with a character string representing the root and systematically appending the label representing the child branch or child leaf selected at each fork to classify the item; ordering the set of parameters for each child leaf that complete the description of an item classified at the child leaf and encoding the value for each parameter as a string of predefined length in the ordered parameter sequence where so the parameter values for an item classified at the child leaf are represented as a character string;

~~generating~~ defining the compact item descriptor for an item as the commodity code for the item concatenated with the encoded parameter values for the item;

generating the compact item descriptor for the first item;

generating the compact item descriptor for the second item;

comparing the compact item descriptor for the first item with the compact item descriptor for second item where either the two compact descriptors are the same

and the items are interchangeable or the compact item descriptors are different and the items are not interchangeable.

Claim 2. (Presently Amended) The compact item descriptor of claim 1 and ~~a~~-the first database providing an entry including an item part number and item description field wherein the item part number for the first item is stored as the item part number and the compact item descriptor for the first item is stored in the item description field of the database entry, and, the first database item description field is queried using the compact item descriptor of the first item as the query argument and the first database returns the part number for the first item as the response to the query.

Claim 3. (Presently Amended) The compact item descriptor of claim 1, ~~a~~-the first database, and interchangeable first item and second item; where the first database provides an entry for the first item comprising an item description field containing the compact item descriptor for the first item, supplier name, and supplier part number for the first item; and, the database item description field is queried with the compact item descriptor for the second item and the database responds with the supplier name and supplier part number for the first item.

Claim 4. (Presently Amended) The compact item descriptor of claim 1 and ~~a~~-the first database wherein the first database provides an entry for the first item comprising an item description field containing the compact item descriptor for the first item, the supplier name, and the supplier part number for the first item; and, the first database is queried with the supplier name and the supplier part number for the first item and the first database responds with the compact item descriptor for the first item.

Claim 5. (Presently Amended) The compact item descriptor of claim 1, ~~a~~-the first database, and a second database wherein the first database provides an entry comprising a part number for the first item and an item description field; and the second database provides an entry for the first item comprising the supplier name, the supplier part number, and compact item descriptor in the description field for the first item where the second database is queried with the supplier name and the supplier part number of the first item, the second database responds with the compact item descriptor of the first item, and the compact item descriptor for the first item is stored in the item description field of the first item in the first database .

Claim 6. (Presently Amended) The compact item descriptor of claim 1 and interchangeable first item and second item; and ~~a~~-the first database providing an entry comprising a part number, an item description field containing the compact item descriptor for the first item, a supplier name, and a supplier part number for the first item; and the first database is queried with the compact item descriptor of the second item as the item description argument and the database responds with the supplier name and the supplier part number for the first item.

Claim 7. (Presently Amended) The compact item descriptor of claim 1, interchangeable first item and second item, and ~~a~~-the first database providing an entry comprising a part number, an item description field containing the compact item descriptor for the first item, the supplier name and the supplier part number for the first item and a second database providing an entry comprising an item description field containing the compact item descriptor of the second item, the supplier name and supplier part number for the second item wherein the second database description field is queried with the compact item descriptor for the first item and the second database responds with the supplier name and supplier part number for an interchangeable item, the second item.

Claim 8. (Presently Amended) The compact item descriptor of claim 1, interchangeable first item and second item; and ~~a~~-the first database providing an entry comprising an item description field containing the compact item descriptor for the first item, a supplier name, and a supplier part number for the first item wherein the first database item descriptor field is queried with the compact item descriptor for the second item and the supplier name for the first item and the first database responds with supplier part number for the first item, an interchangeable item from the supplier with the supplier name.

Claim 9. (Cancel)

Claim 10. (Presently Amended) The compact item descriptor of claim 1 and ~~a~~-the first database providing for the first item, a supplier name, supplier part number, and an item description field containing the first compact item descriptor and the first database item description field is queried with a compact item descriptor including a Standard Query Language, SQL, wild card character to partially specify a compact item descriptor where the first compact item descriptor matches the partially specified compact item descriptor and the first database responds with the supplier name and supplier part number of the first item.

Claim 11. (Presently Amended) The compact item descriptor of claim 1 and a the first database providing for the first item a description field containing the compact item descriptor, a supplier name, and a core supplier part number wherein the first database description field is queried with the compact item descriptor for the first item and supplier name and the first database responds with the core supplier part number for the first item and a supplier suffix table providing a mapping of supplier names and manufacturing process requirements to modifications to the core supplier part numbers is queried with the supplier name and a manufacturing process requirement and the supplier suffix table responds with the modification to the core supplier part number ~~such that~~ so the resulting supplier part number corresponds to a first item that meets the manufacturing process requirement.

~~CANCEL~~  
Claim 12. (Withdrawn) A method for generating compact item descriptor, a machine readable character string, describing an item such that two different items generating the same compact item descriptor are interchangeable, the method comprising the steps:

define a first item;

define a second item;

define a classification tree for a set of items including the first item and second item such that the first item and second item classify to the same leaf node with the same parameter values if and only if the items are interchangeable;

define a commodity code, a character string, for each leaf node that uniquely identifies the leaf node;

define a set of parameters for each leaf node that complete the description of an item classified at the leaf node and encode the value for each parameter as a character or string of characters such that the parameter values for an item classified at the leaf node are represented as a character string;

defining the compact item descriptor for an item as the commodity code for the item concatenated with the encoded parameter values for the item;

such that the first item and second item are interchangeable if and only if the compact item descriptor for the first item is the same as the compact item descriptor for the second item.

~~CANCEL~~  
Claim 13. (Withdrawn) The compact item descriptor of claim 12 and a materials system and/or Approved Manufacturing List, AML, providing an item description field containing the compact descriptor of the first item and a part number wherein the item description

field of the materials system and/or AML is queried with the compact item descriptor for the first item and the materials system and/or AML responds with the part number.

Claim 14. ~~CANCEL~~ (Withdrawn) The compact item descriptor of claim 12 and a catalog, where the first item and second item are interchangeable and thus, the compact item descriptor for the first item is the same as the compact descriptor for the second item; and the catalog provides an item description field containing the compact descriptor of the first item, a supplier name, and supplier part number wherein the catalog item description fields are queried with the compact item descriptor for the second item and supplier name and the catalog responds with the supplier part number of an interchangeable item, the first item, from the specified supplier.

Claim 15. ~~CANCEL~~ (Withdrawn) The compact item descriptor of claim 12 and a catalog providing an item description field containing the compact descriptor of the first item, a supplier name, and supplier part number wherein the catalog item description fields are queried with the compact item descriptor for the first item and the catalog responds with the supplier name and the supplier part number of the first item.

Claim 16. ~~CANCEL~~ (Withdrawn) The compact item descriptor of claim 12 and a catalog providing an item description field containing the compact descriptor of the first item, a supplier name, and a core supplier part number wherein the catalog item description fields are queried with the compact item descriptor for the first item and supplier name and the catalog responds with the core supplier part number for the first item and a supplier suffix table is queried with the supplier name and a manufacturing process requirement, including carrier, and the supplier suffix table responds with the modification to the core supplier part number such that the resulting supplier part number for the first item meets the manufacturing process requirement.

Claim 17. ~~CANCEL~~ (Withdrawn) The compact item descriptor of claim 12 and a catalog providing for the first item, a supplier name, supplier part number, and an item description field containing the first compact item descriptor and the catalog item description fields are queried with a compact item descriptor that includes a Standard Query Language, SQL, wild card character to partially specify a compact item descriptor where the compact descriptor of the first item matches the partially specified compact item descriptor and the catalog responds with the supplier name and supplier part number of the first item.

Claim 18. (Cancel)

Claim 19. (Cancel)

Claim 20. (Cancel)

Claim 21. ~~(Withdrawn)~~ <sup>CANCEL</sup> A catalog system providing a compact item descriptor, a machine readable character string, wherein two different items are interchangeable if and only if their compact item descriptors are equal, comprising:

a catalog means providing for an item an item description field containing the compact descriptor for the item, a supplier name and a supplier part number for the item;

a first query means providing a query of the catalog item description fields with a compact item descriptor and the catalog returns the supplier name and the supplier part number for those items where the description field matches the compact item descriptor;

a classification tree means providing classifications for a set of items including a first item and a second item such that the first item and second item classify to the same leaf node with the same parameter values if and only if the items are interchangeable;

a commodity code means providing a unique character string for each leaf node of the classification tree that identifies the leaf node;

an encoded parameter value means providing for each leaf node a set of parameters that complete the description of an item classified at the leaf node and encode the value for each parameter as a character or string of characters such that the parameter values for an item classified at the leaf node are represented as a character string;

a compact item descriptor means providing for an item, classification of the item using the classification tree means and a compact descriptor for the item comprising the commodity code for the leaf node for the classified item concatenated with the encoded parameter values for the item;

such that:

a first item and second item are interchangeable;

the first item is provided a first compact item descriptor from the compact descriptor means;

the second item is provided a second compact item descriptor from the compact descriptor means that, since the items are interchangeable, is the same as that for the first item;

the catalog means provides for the first item: an item description field containing the first compact descriptor, the supplier name for the first item, and the supplier part number for the first item;

wherein the catalog item description fields are queried with the second compact item descriptor and the catalog returns the supplier name and the supplier part number for an interchangeable item, the first item.

~~CANCEL~~  
Claim 22. (Withdrawn) The catalog and compact item descriptor of claim 21, wherein the catalog item description fields are queried with a compact item descriptor that includes a standard query language, SQL, with card character to partially specify a compact item descriptor where the compact descriptor of the first item matches the partially specified compact item descriptor and the catalog responds with the supplier name and supplier part number of the first item.

~~CANCEL~~  
Claim 23. (Withdrawn) The catalog and compact item descriptor of claim 21, further provides:

a supplier suffix means when queried with the supplier name and a manufacturing process requirement, including carrier, the supplier suffix means responds with the modification to the core supplier part number such that the resulting supplier part number for the first item meets the manufacturing process requirement;

the catalog means further provides an item description field containing the compact descriptor of the first item, a supplier name, and a core supplier part number;

such that the catalog item description fields are queried with the compact item descriptor for the first item and supplier name and the catalog responds with the core supplier part number for the first item and the supplier suffix means is queried with the supplier name and manufacturing process requirement and the modification to the core supplier part number results in a supplier part number for the first item that meets the manufacturing process requirement.

~~CANCEL~~  
Claim 24. (Withdrawn) The catalog and compact item descriptor of claim 21, wherein the catalog further provides a second query means providing a query of the catalog item description fields with a compact item descriptor and a supplier name and the catalog

returns the supplier part number for those items where the description field matches the compact item descriptor such that the catalog is queried with the compact item descriptor for the second item and the supplier name for the first item and the catalog responds with the supplier part number for an interchangeable item, the first item, provided by the supplier.

Claim 25. (Presently Amended) A method to generate in a database system a compact item descriptor, a machine readable character string, the method comprising the steps:

providing a first item;

providing a classification tree as a recursive structure in the database

comprising a root parent fork with child branches to child forks with child branches or child leaves each with a set of parameters which classifies a set of items

including the first item where two different items that classify to the same child leaf and same-parameter values are interchangeable or those that do not classify to the same child leaf and parameter values are not interchangeable;

adding at each fork of the classification tree, labeling a character or sub-string of characters ~~as a label that~~ distinguishes each child branch or child leaf or the fork;

generating a commodity code, a character string that uniquely identifies the sequence of child branches and child leaf selected for the classification of an item represented by the child leaf, starting at the root of the classification tree with a character string representing the root and systematically appending the label representing the child branch or child leaf selected at each fork to classify the item; ordering the set of parameters for each child leaf that complete the description of an item classified at the child leaf and encoding the value for each parameter as a string of predefined length in the ordered parameter sequence such that the parameter values for an item classified at the child leaf are represented as a character string;

generating the commodity code for the first item;

encoding the parameter values at the child leaf for the first item;

~~generating~~ defining the compact item descriptor for the first item as the commodity code for the first item concatenated with the encoded parameter values for the first item;

generating the compact item descriptor for the first item.



Claim 26. (Presently Amended) The method of claim 25 and a second item where the classification tree classifies the second item; the method further provides:

generating the compact descriptor for the second item;

comparing the compact descriptor for the second item with the compact descriptor for the first item;

determining the interchangeability of the first item and second item where either the compact descriptors are the same and the items are interchangeable or the compact descriptors are different and the items are not interchangeable.

Claim 27. (Presently Amended) The compact item descriptor of claim 25 and a second item where the second item is interchangeable with the first item and the classification tree classifies the second item, and a the database with an entry for the first item comprising an item description field containing the compact item descriptor for the first item, supplier name, and supplier part number for the first item; the compact item descriptor for the second item is generated; wherein, the database item description field is queried with the compact item descriptor for the second item and the database responds with the supplier name and supplier part number for the first item.

Claim 28. (Presently Amended) The compact item descriptor of claim 25 and a the database providing for the first item, a supplier name, supplier part number, and an item description field containing the first compact item descriptor and the database item description field is queried with a compact item descriptor including a Standard Query Language, SQL, wild card character to partially specify a compact item descriptor where the first compact item descriptor matches the partially specified compact item descriptor and the database responds with the supplier name and supplier part number of the first item.

Claim 29. (Presently Amended) A method to encode in a database system the classification and parameter values of an item into a machine readable character string where two items with the same classification and parameter values encode the same string or two items with different classifications or parameter values encode different strings, the method comprising:

providing a first item;

providing a second item;

providing a classification tree as a recursive database structure comprising a root parent fork with child branches to child forks with child branches or child leaves each with leaf a set of parameters values as elements of the classification where the classification tree classifies a set of items including the first item and second item;

~~adding at each fork of the classification tree, labeling a character or sub-string of characters as a label that distinguishes each child branch or child leaf of the fork;~~  
generating a commodity code, a character string that uniquely identifies the sequence of child branches and child leaf selected for the classification of an item represented by the child leaf, starting at the root of the classification tree with a character string representing the root and systematically appending the label representing the child branch or child leaf selected at each fork to classify the item;  
ordering the set of parameters for each child leaf that complete the description of an item classified at the child leaf and encoding the value for each parameter as a string of predefined length in the ordered parameter sequence such that the parameter values for an item classified at the leaf are represented as a character string;

generating the commodity code for the first item;

encoding the parameter values at the leaf for the first item;

generating the encoded classification-string for the first item as the commodity code for the first item concatenated with the encoded parameter values for the first item;

generating the commodity code for the second item;

encoding the parameter values at the leaf for the second item;

generating the encoded classification-string for the second item as the commodity code for the second item concatenated with the encoded parameter values for the second item;

comparing the encoded classification-string for the first item with the encoded classification-string for the second item where either the encoded strings are the same and the first item and second item classify to the same child leaf with the same parameter values and the encoded classifications are the same or the encoded strings are different and the first item and second item do not classify to

the same child leaf with the same parameter values and the encoded classifications are different.

Claim 30. (Presently Amended) The encoded classification of claim 29 where the first item and second item classify to the same child leaf with the same parameter values and a the database with provides an entry for the first item comprising an item description field containing the encoded classification-string for the first item and an associated field for the first item; wherein, the database item description field is queried with the encoded classification-string for the second item and the database responds with the associated field for the first item.

Claim 31. (Presently Amended) The encoded classification-string of claim 29 and a the database providing-provides for the first item, an item description field containing the encoded classification-string for the first item and an associated field and the database item description field is queried with an encoded classification-string including a Standard Query Language, SQL, wild card character to partially specify a encoded classification-string where the encoded classification-string for the first item matches the partially specified encoded classification-string and the database responds with the associated field for the first item.

Claim 32 (New) The compact descriptor of Claim 1 and the first item wherein the compact descriptor for the first item is generated in the first database and the compact descriptor is used as the description of the first item in documents that provide the first item description.

Claim 33 (New) The compact descriptor of Claim 1 and the first item wherein the first item has an alias part number as an alternative to the part number and the first database provides a supplier part number alias table that relates the first item to the alias part number and a query of the supplier part number table with the alias part number returns the first item with the compact descriptor.

Claim 34 (New) The method of Claim 1, and the first item wherein the first item classifies to a classification tree child leaf and generates a commodity code and the commodity code for the first item is used in documents and systems that provide a commodity code.